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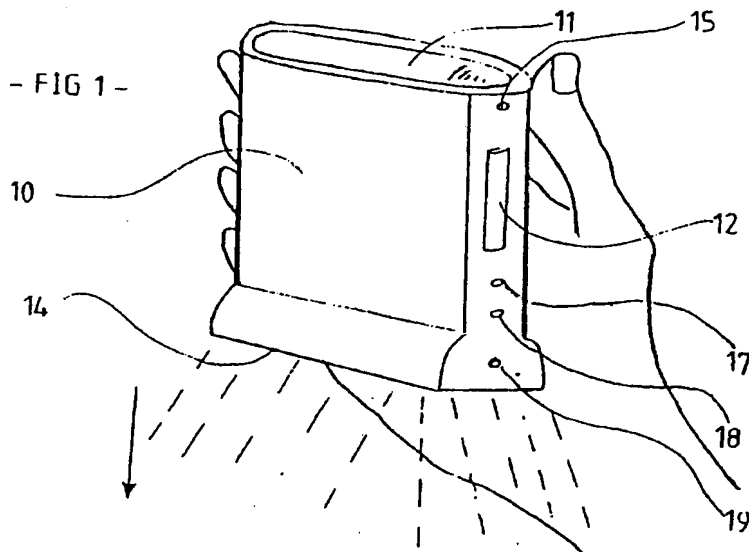
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(56) Documents Cited  
WO 84/00897 A1 US 4952389 A US 4896042 A  
US 4786812 A US 4595838 A

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(54) Sterilisation apparatus

(57) A portable sterilisation unit comprises a housing 10, a power supply, a switch 12 and a light source which is activated by the switch, the light source being predominately in the ultraviolet spectrum so that bacteria are destroyed when the sterilisation unit's light emissions fall on them.



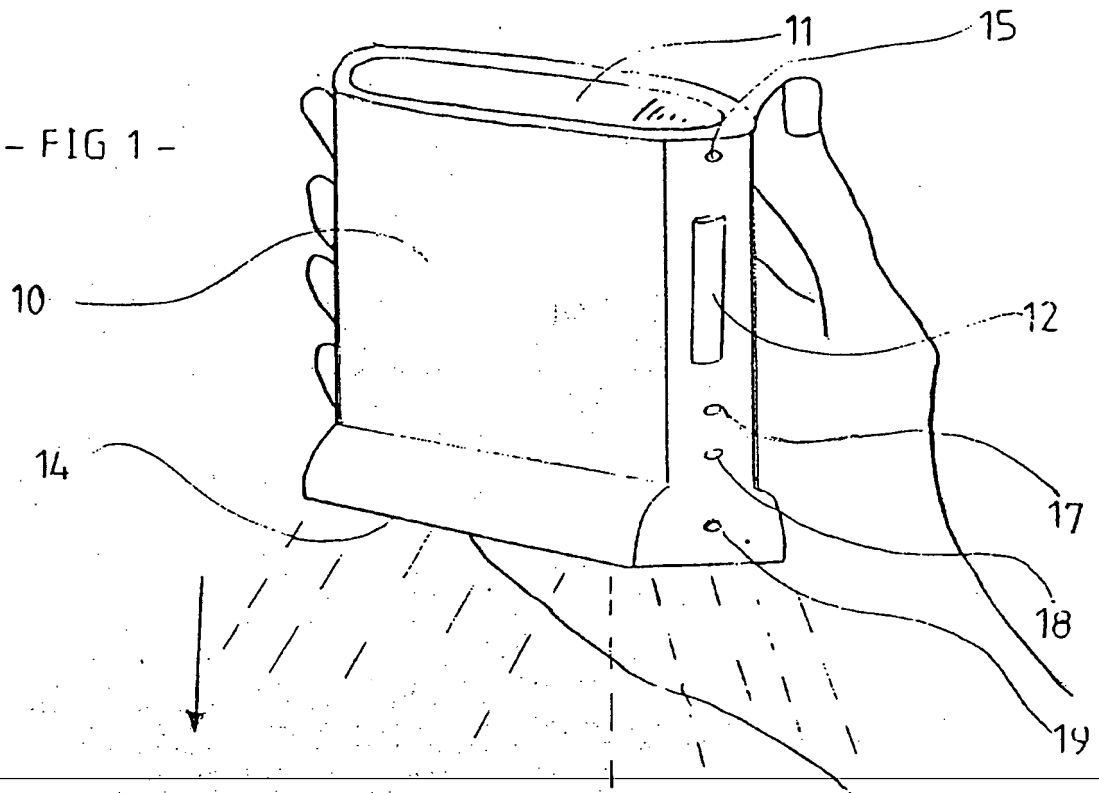
The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1995

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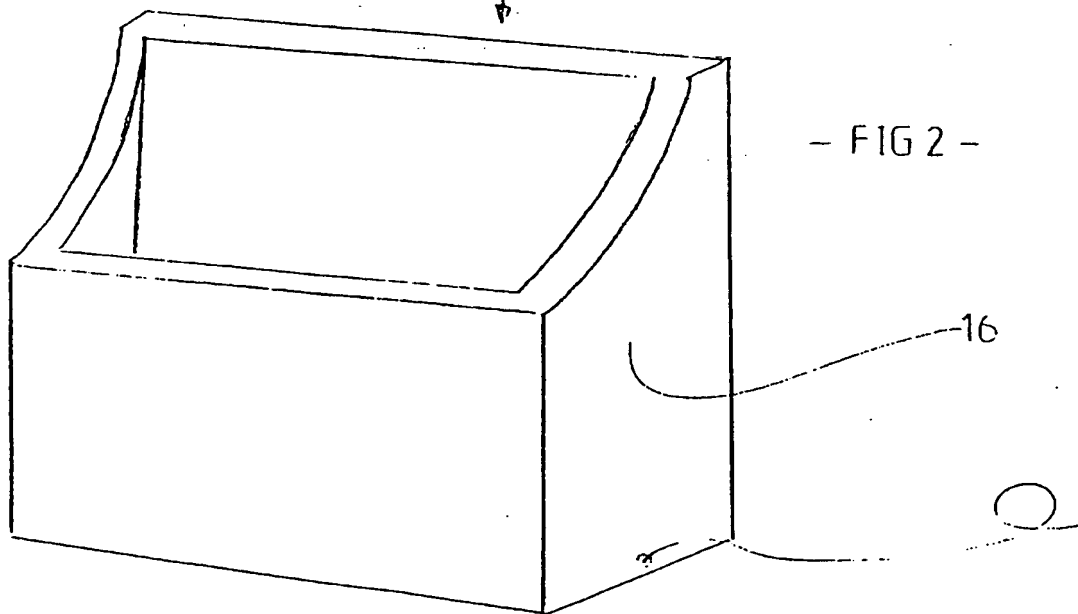
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- FIG 1 -



- FIG 2 -



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#### STERILISATION APPARATUS

This invention relates to sterilisation apparatus.

It is known that bacteria can cause illness should it enter humans and in some cases serious illness. It is therefore important to maintain a clean environment and personal hygiene especially in the preparation of food so as to lessen the likely hood of bacterial contamination. Present methods of control in commercial and in the home rely on chemical cleaners. However, unless particular care is taken when cleaning, some bacteria may survive and given the opportunity will multiply with the resulting dangers.

According to the present invention there is provided an apparatus for sanitizing worktops, surfaces, kitchen utensils, etc. comprising a housing, power means and a light source. The light source preferably being ultraviolet.

A specific embodiment of the present invention will now be described by way of example with reference to the accompanying drawing in which:-

Figure 1 shows in perspective a hand held sanitizer together with its associated charger unit.

Referring to the drawing the sanitizer comprises a housing 10 preferably oblong in shape so as to comfortably fit in the hand for ease of operation, the bottom 14 of the housing contains a light source, the other end is fitted with a removable cover 11 to give access to the battery compartment. In this example, two rechargeable Nickel Cadmium batteries are used, however, other types and quantities of batteries may be used for example Alkaline Manganese, Lithium, Lead Acid, etc. With reference to fig 1 the housing 10 is preferably made from a plastic material fitted with a clear window (not shown) to protect the ultraviolet bulb or tube (not shown), the cover 11 is removable to facilitate light source replacement. In operation the unit is positioned conveniently close to the surface or item that requires sanitizing approximately 25 to 50mm. However greater distances will have a sanitizing effect but may require a slower movement over the surface to be sanitized or more than one pass to destroy bacteria which is exposed to the light source. A visual and/or audible indicator is provided to help the operator maintain the optimum distance when operating the unit, this may be by a red 17 and green led 18 or some other suitable means. A low power indicator via an led 19 or an audible warning may be advantageous, this may also indicate a usable power battery state, or as an alternative a graded battery indicator in the form of led's or an LCD display. A switch 12 is provided

preferably on the side of the unit which is depressed while operating the unit, a safety cut-out (not shown) may be provided so that if the unit is tipped upside-down or moved out of its normal plain of operation which is 45 degrees from the vertical with the light source facing down as shown by the arrows in fig 1, the unit will remain inoperative and a visual and/or audible warning will be given until the unit is returned to within the permitted operating parameters or activation of a further switch 15 should the unit be required to be operated beyond its normal mode of operation. The housing 10 containing the light source may be inserted into a holder 16 for neat storage which in this example also allows recharging of the batteries via suitable connections (not shown) in the holder which mate with receptacles (not shown) on the sanitizing unit when the unit is placed into the holder, furthermore the holder may be wall mounted or self standing.

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- CLAIMS -

1 A portable sanitizing unit comprising a housing, power supply, a switch means and an emitting light source which is effective in destroying bacteria.

2 A portable sanitizing unit as claimed in claim 1 wherein the light source is predominantly in the ultraviolet spectrum.

3 A portable sanitizing unit as claimed in claim 1 and claim 2 wherein the small size of the unit means it is easily held in the hand and operated as illustrated in drawing figure 1 and that the switch to activate the sanitizing unit is so disposed so as to be easily operated when the unit is held in one hand.

4 A portable sanitizing unit as claimed in any preceding claim wherein the unit is battery powered by standard or rechargeable batteries and the unit may be fitted with a single or multiples of batteries.

5 A portable sanitizing unit as claimed in any preceding claim wherein the sanitizing unit may be placed in a holder to facilitate recharging of the battery(s) via connections which are made when the sanitizing unit is inserted into the charger holder.

- 6 A portable sanitizing unit as claimed in any preceding claim wherein the light source may be a single or several gas filled bulb(s) or tube(s).
- 7 A portable sanitizing unit as claimed in any preceding claim wherein a visual and/or audible indicator is given of the most effective distance of the light source emitted from the sanitizing unit from the surface that is being sanitized.
- 8 A portable sanitizing unit as claimed in any preceding claim wherein a means to render the sanitizing unit inoperative should it be used outside predetermined orientation parameters.
- 9 A portable sanitizing unit constructed, arranged and adapted to operate substantially as herein described with reference to the accompanying drawing.

**Patents Act 1977**  
**Examiner's report to the Comptroller under Section 17 - 6.**  
**(The Search report)**

**Application number**  
**GB 9510638.1**

**Relevant Technical Fields**

**Search Examiner**  
**H J EDWARDS**

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**Date of completion of Search**  
**31 AUGUST 1995**

**Databases (see below)**

- (i) UK Patent Office collections of GB, EP, WO and US patent specifications.

**Documents considered relevant following a search in respect of Claims :-**  
**1 to 9**

- (ii) **ONLINE: WPI**

**Categories of documents**

- X:** Document indicating lack of novelty or of inventive step.      **P:** Document published on or after the declared priority date but before the filing date of the present application.  
**Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.      **E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.  
**A:** Document indicating technological background and/or state of the art.      **&:** Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
X,&	WO 84/00897 A1	(KERSCHGENS) whole document	1-3, 6
X	US 4952369	(BELILOS) whole document	1-4, 6, 8
X	US 4896042	(HUMPHREYS) whole document	1-3, 6
X	US 4786812	(HUMPHREYS) whole document	1-3, 6
X,&	US 4595838	(KERSCHGENS) whole document	1-3, 6

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).